



- *Input / output transformer isolated*
- *Eliminates ground potential problems*
- *Low voltage AC and DC inputs*
- *Optimal four stage charging*
- *State of charge / service LEDs*
- *Low standby battery drain*
- *Customizable charge algorithm*
- *Optional control / status signals*
- *Optional temperature compensation*
- *Vibration resistant*
- *Reverse polarity protected*
- *Over temperature protected*
- *Over current / voltage protected*
- *Fan cooled*
- *Two year warranty*

Description

The DPIC-FC series is a DC/DC battery charger line designed pursuant to customization and flexibility. With the ability to accept low voltage AC and DC inputs, diverse requirements ranging from marine to automotive can be met. The input and output are transformer isolated, eliminating ground loops and allowing battery charging at potentials not referenced to the input. With a wide operating temperature range (-20°C to

50°C), the charger is especially suited for high end industrial applications. The DPIC-FC is factory programmable to accommodate several charging algorithms and an LED display to indicate status. The charger is controlled by an embedded microcontroller that contains software developed by and which is proprietary to Charge tek.

Part number definitions

DPIC-FC model numbers are in the form DPIC-WXYZ-OFC, where W specifies the input voltage, X specifies the output voltage, YZ specifies the output current and O specifies options (consult factory for temperature compensation and status output option availability). The available standard product offerings are shown below. Special output configurations are available. Please contact us for any variations required.

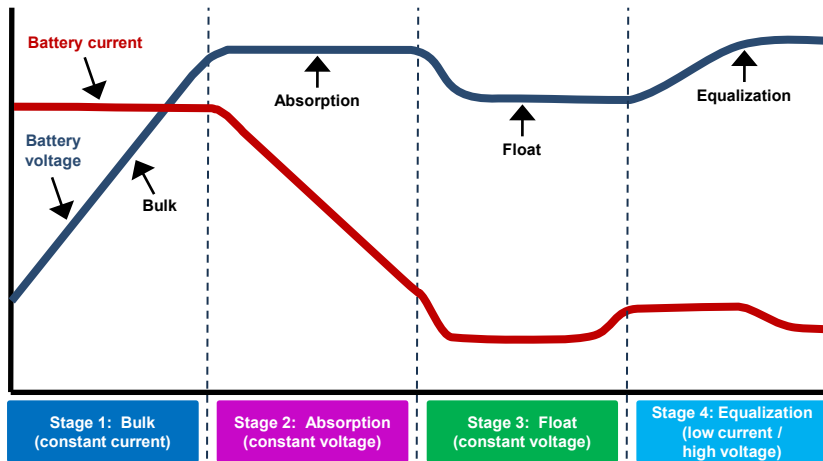
DPIC-FC part numbers are easily configured. For example, the DPIC-4307-FC has a 48V input (W=4), 36V battery voltage (X=3) and 7 amps charging current (YZ=07).

| | DPIC input voltage range | | | |
|-----------------|--------------------------|-----------------|-----------------|-----------------|
| | 12V (10V - 20V) | 24V (17V - 42V) | 36V (28V - 60V) | 48V (34V - 80V) |
| Battery voltage | | | | |
| 12V | 1120 | 2120 | 3120 | 4120 |
| 24V | 1210 | 2210 | 3210 | 4210 |
| 36V | 1307 | 2307 | 3307 | 4307 |
| 48V | 1405 | 2405 | 3405 | 4405 |

DPIC-FC Series Datasheet

Charging specifications

Four stage charging curve



Charging algorithm: Supplies constant current to battery until absorption voltage is reached (V_{FSTERM}). Transition to absorption mode follows and regulates battery voltage at V_{FSTERM} until current decreases to I_{ABTERM} . Float mode follows and regulates battery voltage at V_{FL} . At the user's discretion, an equalization mode can be initiated. The equalization voltage V_{EQ} is approximately 2.5V/cell and the battery current is limited to a small value. For more information, please refer to the information tab for the equalization and desulphation page at our website: www.chargetek.com/equalization.html

12V battery bank

| PARAMETER | DESCRIPTION / CONDITIONS | MIN | NOM | MAX | UNITS |
|--------------|--|------|------|------|-------|
| V_{FSTERM} | Fast charge termination voltage, 25°C | 14.3 | 14.4 | 14.5 | VDC |
| V_{FL} | Float voltage, $I_{OUT} < I_{FS}$, 25°C | 13.4 | 13.5 | 13.6 | VDC |
| I_{FS} | Fast charge current, $V_{BATTERY} = XY$ volts | 20.0 | 21.0 | 22.0 | Amps |
| I_{ABTERM} | Absorption mode charge termination current, transition from fast to absorption | 2.5 | 3.0 | 3.5 | Amps |
| I_{FLTERM} | Float charge termination current | 0.3 | 0.4 | 0.5 | Amps |
| V_{EQ} | Charge current less than 1A | | 15.6 | | volts |
| I_{SBY} | Standby current, AC off | | | 1.0 | ma |

24V battery bank

| PARAMETER | DESCRIPTION / CONDITIONS | MIN | NOM | MAX | UNITS |
|--------------|--|------|------|------|-------|
| V_{FSTERM} | Fast charge termination voltage, 25°C | 28.6 | 28.8 | 29.0 | VDC |
| V_{FL} | Float voltage, $I_{OUT} < I_{FS}$, 25°C | 26.8 | 27.0 | 27.2 | VDC |
| I_{FS} | Fast charge current, $V_{BATTERY} = XY$ volts | 9.0 | 10.0 | 11.0 | Amps |
| I_{ABTERM} | Absorption mode charge termination current, transition from fast to absorption | 2.5 | 3.0 | 3.5 | Amps |
| I_{FLTERM} | Float charge termination current | 1.2 | 1.5 | 1.8 | Amps |
| V_{EQ} | Charge current less than 1A | | 31.2 | | volts |
| I_{SBY} | Standby current, AC off | | | 1.0 | ma |

36V battery bank

| PARAMETER | DESCRIPTION / CONDITIONS | MIN | NOM | MAX | UNITS |
|--------------|--|------|------|------|-------|
| V_{FSTERM} | Fast charge termination voltage, 25°C | 42.9 | 43.2 | 43.4 | VDC |
| V_{FL} | Float voltage, $I_{OUT} < I_{FS}$, 25°C | 40.2 | 40.5 | 40.7 | VDC |
| I_{FS} | Fast charge current, $V_{BATTERY} = XY$ volts | 6.5 | 7.0 | 7.5 | Amps |
| I_{ABTERM} | Absorption mode charge termination current, transition from fast to absorption | 1.7 | 2.0 | 2.3 | Amps |
| I_{FLTERM} | Float charge termination current | 0.8 | 1.0 | 1.2 | Amps |
| V_{EQ} | Charge current less than 1A | | 46.8 | | volts |
| I_{SBY} | Standby current, AC off | | | 1.0 | ma |

48V battery bank

| PARAMETER | DESCRIPTION / CONDITIONS | MIN | NOM | MAX | UNITS |
|--------------|--|------|------|------|-------|
| V_{FSTERM} | Fast charge termination voltage, 25°C | 57.8 | 58.0 | 58.2 | VDC |
| V_{FL} | Float voltage, $I_{OUT} < I_{FS}$, 25°C | 53.8 | 54.0 | 54.2 | VDC |
| I_{FS} | Fast charge current, $V_{BATTERY} = XY$ volts | 4.5 | 5.0 | 5.5 | Amps |
| I_{ABTERM} | Absorption mode charge termination current, transition from fast to absorption | 1.3 | 1.5 | 1.8 | Amps |
| I_{FLTERM} | Float charge termination current | 0.6 | 0.8 | 1.0 | Amps |
| V_{EQ} | Charge current less than 1A | | 62.4 | | volts |
| I_{SBY} | Standby current, AC off | | | 1.0 | ma |

DPIC-FC Series Datasheet

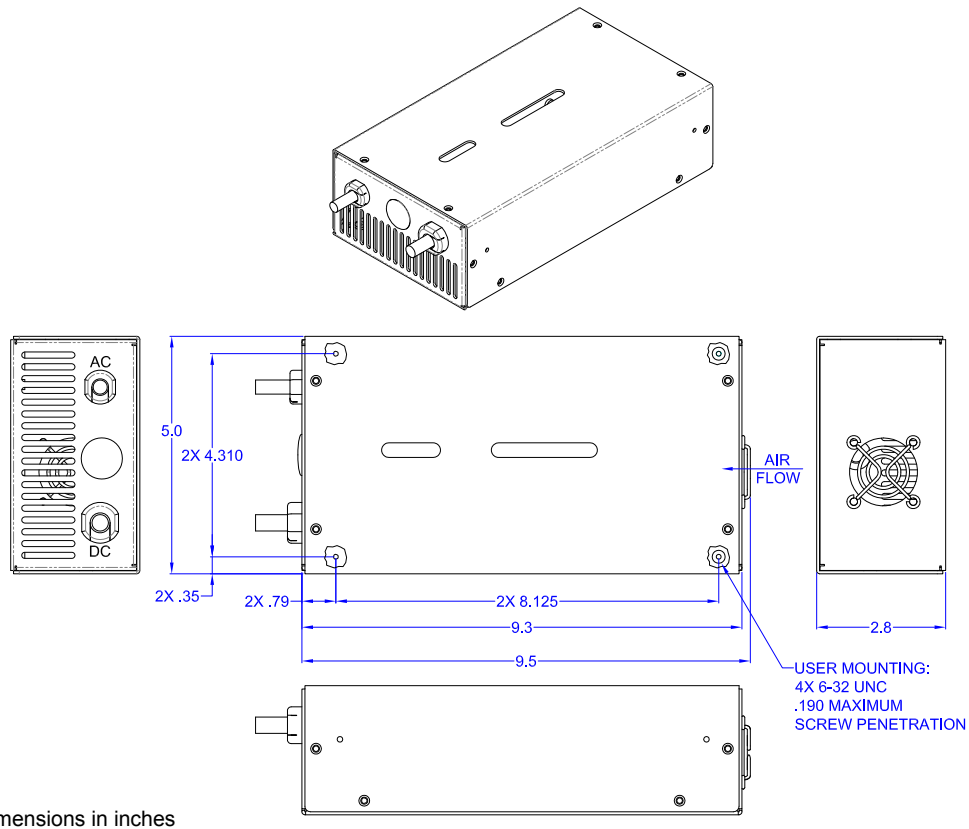
Environmental specifications

| PARAMETER | DESCRIPTION / CONDITIONS |
|---|---|
| Storage temperature | -40°C - 80°C |
| Operating temperature | -20°C - 50°C |
| Relative humidity | 0 - 95°C relative humidity (non-condensing) |
| Input to output / chassis voltage isolation | 1KV (leakage current less than 1mA) |
| Output to chassis voltage isolation | 50V (can be increased / consult factory) |

LED indicators

| PARAMETER | DESCRIPTION | RED | GREEN |
|-------------------|-----------------------------|----------|-------|
| Charging mode | Indicates state of charge | Charging | Float |
| Service indicator | Indicates a charger failure | Fault | |

Outline and mounting



NOTE: Chargetek products are not authorized for use as components in life support systems, hazardous environments, nuclear control systems or other similar applications without the express written consent of the President of Chargetek, Inc. The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.